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SPACE: USSR VS. USA

UNEDITED ROUGH DRAFT TRANSLATION

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By: A correspondent of the Academy of Pedagogic Sciences.

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SPACE: USSR VS. USA

The anniversary of Gherman Titov's space flight approaches. On August 6-7, 1961, he made the longest space flight in the history of mankind. The ship Vostok-2, piloted by Major Titov, meeting seventeen cosmic dawns, flew over 700,000 kilometers: the distance to the Moon and back.

With this date in mind, a correspondent of the Academy of Pedagogic Sciences approached Academician A. Blagonravov with a number of questions. His answers are printed below.

Question: Of what value, in your opinion, is the flight of Gherman Titov to future cosmonautics?

Answer: Gherman Titov is the first and so far the only man from our planet to fully complete the daily life cycle in space.

The complexity of the program of this flight, over that of the flight of Yuriy Gagarin, was not for achieving records, not for effect, but due to the need for checking the conditions for manned space flight, the essential feature of which is a prolonged state of weightlessness. It was also necessary to find out how the human organism, having become accustomed to the absence of gravitational forces in flight, would withstand the rapid increase in load during descent and landing on the Earth. In order to prepare for future, more prolonged space flights around our planet, as well as to nearby heavenly

bodies (the Moon, Mars, Venus), it is necessary to know exactly how a man would withstand this "unearthly" state, if it lasted a week, a month, or more. This is the great value of the second space flight. And we know that space medicine and biology, as a result of this flight, have been enriched with new, exceptionally important data.

The enormous value of the flight consists also of the fact that Gherman Titov twice (during the second and seventh orbits) controlled the ship manually. He did this to check the possibilities of controlling the ship. As was seen, it was easy and convenient to control Vostok-2. It could be oriented in any given attitude, and guided where necessary at any given instant.

Thus, we were the first in the history of space flight to witness guidance of a space vehicle in the space near the Earth.

Question: The American astronauts also controlled their ships manually. What were their tasks in this regard?

Answer: Not everything went favorably with the automatic systems of orientation and guidance of the American ships. As is known, the first American astronaut, John Glenn, at the end of the first orbit detected trouble in the orientation system, owing to which the ship began to swing. Consequently, Glenn had to switch to the manual system of orientation. The second American astronaut, Carpenter, also due to trouble in the automatic orientation system, had to switch to manual control by the end of the second orbit. As we see, some progress has been made by the Americans in improving the automatic orientation systems of their space vehicles. Considering the exceptional importance of the orientation system of orbital vehicles, it is necessary to have both automatic and manual systems on them, i.e., to duplicate the system, in order to ensure complete flight

safety. There are also other characteristics of the flights of the American astronauts.

Both American astronauts made only three orbits each around our planet. Gherman Titov made over seventeen orbits. In addition, while the American space vehicles are capable of seven orbits, and this, in all probability, is not far from the limit of their flight duration, the Soviet space vehicles are designed for ten-day flights.

It is also interesting to note that the weight of the American vehicles was only about one third the weight of the Soviet space vehicles.

Gherman Titov fulfilled a vast program of scientific research, as he himself said, in complete comfort. Even in the descent phase, when a reddish-purple flame raged about Vostok-2, the temperature did not rise above 22°C. The temperature in Glenn's cabin reached 55°, and in Carpenter's cabin it reached 40°C.

The troubles in the orientation and guidance system of Carpenter's ship caused it to land in the Atlantic Ocean 200 miles from the appointed region. As the American specialists themselves said, such a deviation should be considered a "fortunate outcome."

Paying tribute to the virility and skill of the American astronauts, we cannot but note that American space technology in manned space flight still requires considerable improvement.

Regarding the allegations in the foreign press that accidents have happened in the flight training of Soviet cosmonauts, I consider it necessary to say that Yuriy Gagarin and Gherman Titov were the first and only pilot-cosmonauts. No other Soviet citizen has been sent aloft in any rocket or flown in any satellite, and no one has been involved in any accidents.

Question: In June of last year in Geneva, at the meeting of N. S. Khrushchev and President Kennedy on the question of cooperation in the study and use of outer space for peaceful purposes, the representatives of the USSR and the USA discussed a number of important questions. What can you, as the head of the delegation from the USSR, say about this?

Answer: In the course of our negotiations, we discussed plans for a gradual increase in the exchange of information obtained from artificial meteorological satellites, and, in the final analysis, to have coordinated launchings of these satellites. Among other things, we considered plans for joint efforts in the magnetic mapping of the Earth. Both delegations sent their governments the corresponding recommendations concerning the problems discussed.

Question: At the end of June of this year, in the Judicial Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space, concrete plans proposed by the Soviet Union were discussed: 1) declarations of the fundamental principles of the activities of countries in the study and use of outer space and 2) an international agreement on the rescuing of cosmonauts and space vehicles which have made emergency landings. What can you say on this question?

Answer: The American delegate L. Meeker rejected these proposals, which means, from the outset, that they are "unacceptable to America."

In particular, in the declaration the Soviet Union proposed that no country conduct experiments in space which would prevent or make difficult the use of space by other countries.

The Soviet Union proposes to confirm that the use of artificial satellites for gathering spy-reconnaissance information is incompatible

with the high goals which stand before mankind in the utilization of space, and that scientific and technical achievements must be used only in the interests of a better mutual understanding between nations, the development of the science and practice of human activity.

The other Soviet plan (international agreement on the rescue of cosmonauts and space vehicles which have made emergency landings) stipulates the obligation of its participants to use all means at their disposal on behalf of crews in distress and to take measures for their rescue in the event of emergency landing. It also stipulates the obligation that foreign space vehicles, satellites and containers be promptly returned to a country participating in the agreement, or gathered on the open sea.

As is apparent, the Soviet Union has made efforts to eliminate, in so far as possible, any obstacles which would disturb the development of the peaceful use of outer space.

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